Cervical spine disorders

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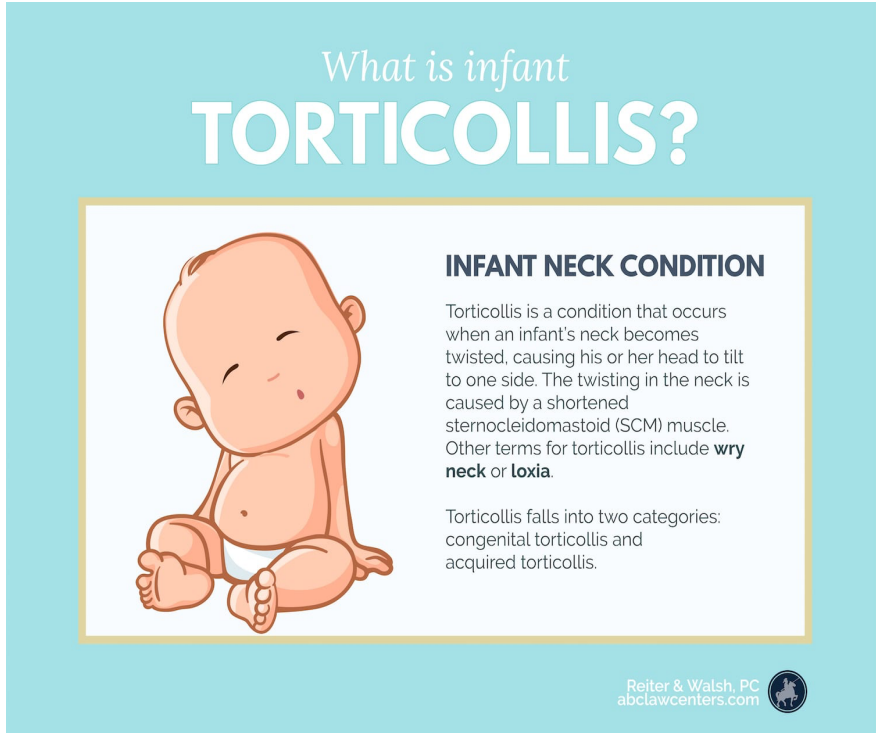
مستشفى اليرموك التعليمي

Torticollis (‘wry neck’, ‘skew neck’)

- In torticollis the chin is twisted upwards and towards one side. It may be either congenital or secondary to other local disorders.

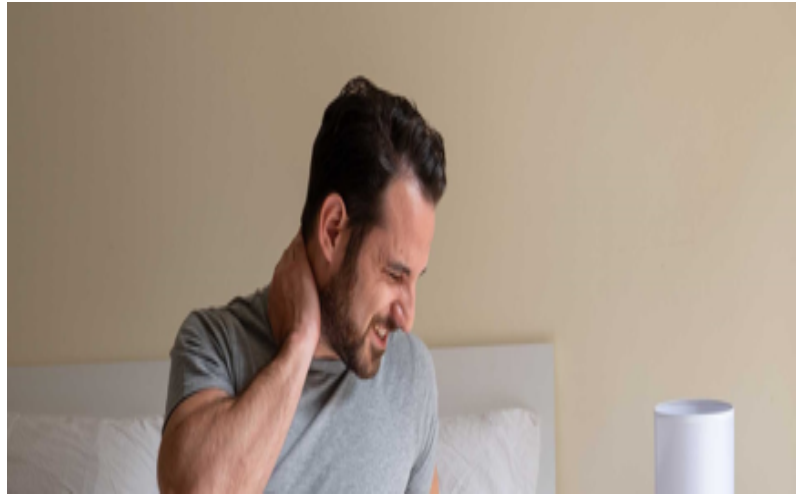
1- Infantile (congenital) torticollis

- **Eatiology** This is uncertain. Probably there is interference with the blood supply of the sternomastoid muscle, caused by injury during birth



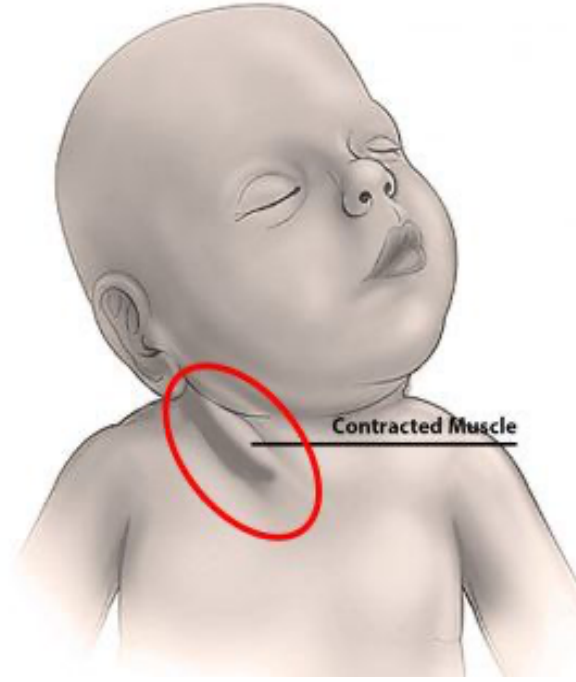
2- Secondary torticollis

- Wry neck, due to muscle spasm, may develop as a result of acute disc prolapse (the most common cause in adults), inflamed neck glands, vertebral infection, injuries of the cervical spine or ocular disorders.



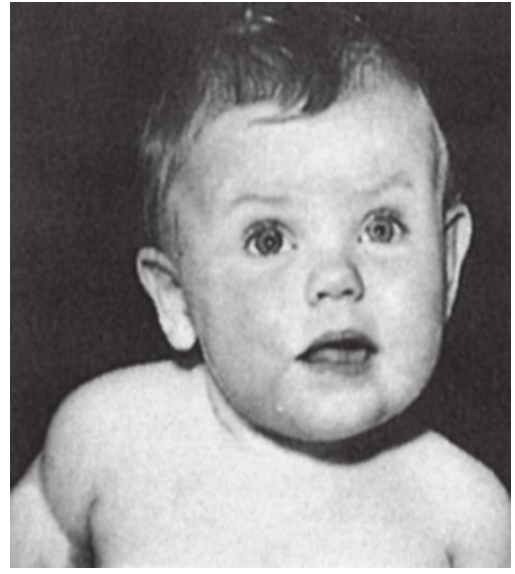
Pathology

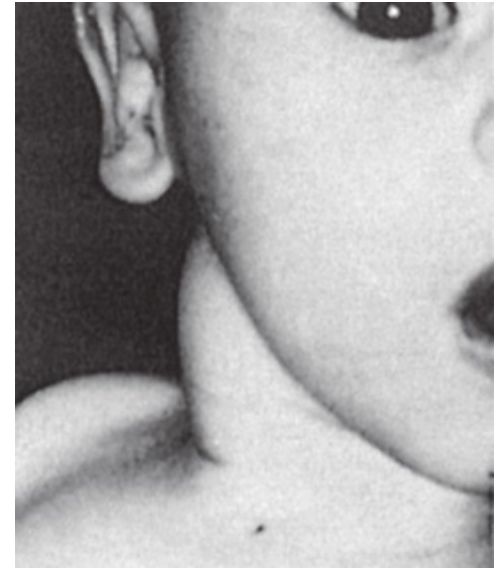
- In the established condition, part of the affected muscle is replaced by contracted fibrous tissue.
- In some cases contracture is known to have been preceded, in early infancy, by a tumour-like thickening of the muscle**(‘sternomastoid tumour’),** the histology being that of muscle infarction and replacement by fibrous tissue



Clinical features

- The child, often between 6 months 3 years old when brought for consultation, is noticed to hold the head on one side.
- On examination, the contracted sternomastoid muscle is felt as a tight cord or lump. The ear on the affected side is approximated to the corresponding shoulder.





- In long-established cases there is retarded development of the face on the affected side, with consequent asymmetry.

Treatment

- if a child has a sternomastoid ‘tumour’, subsequent deformity may be prevented by gentle, daily manipulation and stretching of the neck under the supervision of a physiotherapist

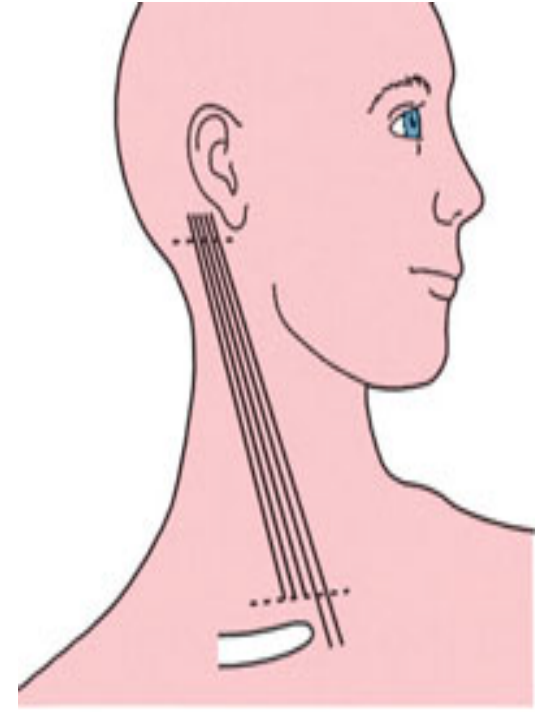
- Nonoperative treatment is successful in most cases, but
- if the condition persists beyond 1 year
- Operative treatment is required to prevent progressive facial
- deformity.
- The contracted muscle is divided (usually at its lower end but sometimes at the upper end or at both ends) and the head is manipulated into the neutral position.
- After operation, correction is maintained with a temporary orthosis

Treatment

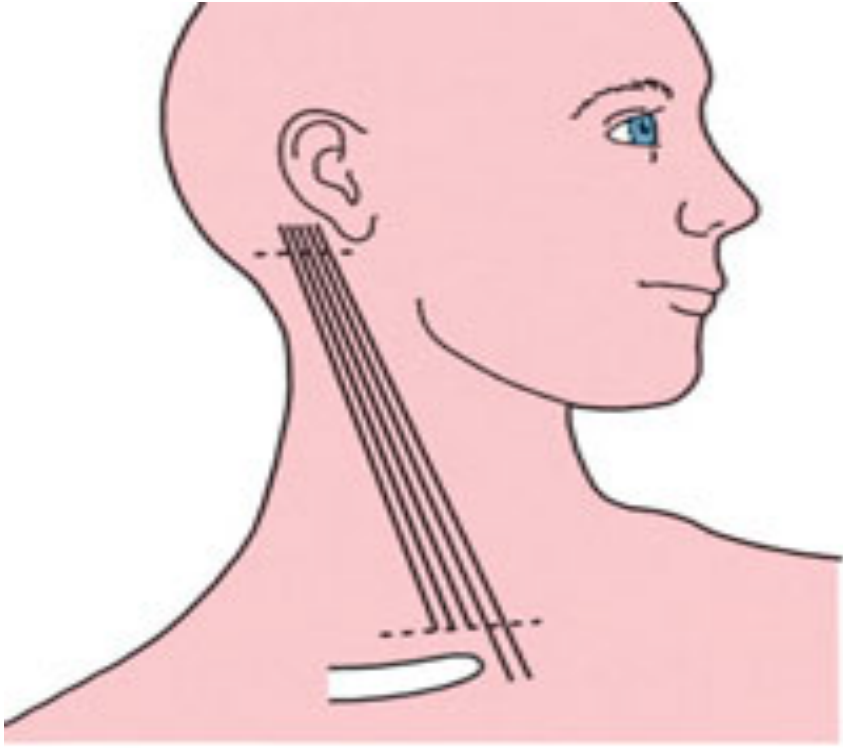
- **Conservative treatment**
- **if a child has a sternomastoid ‘tumour’, subsequent deformity may be prevented by gentle, daily manipulation and stretching of the neck with intermetent collar under supervision of a physiotherapist .**
- **Nonoperative treatment is successful in most cases.**

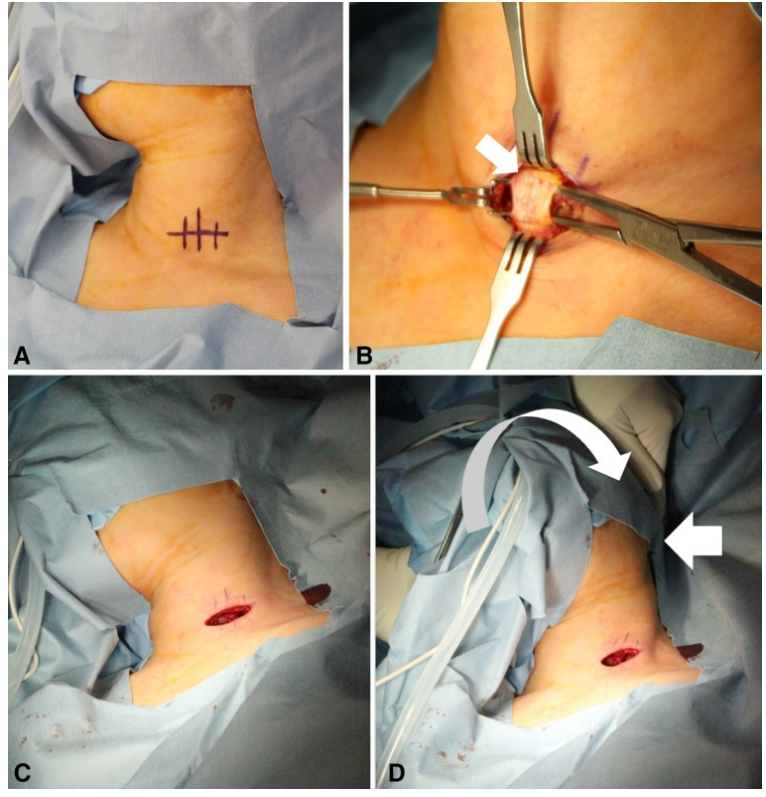
Operative treatment

- Operative treatment is required if the condition persists beyond 1 year to prevent progressive facial deformity.
- The contracted muscle is divided (usually at its lower end but sometimes at the upper end or at both ends) and the head is manipulated into the neutral position.
- After operation, correction is maintained with a temporary orthosis (collar) followed by stretching exercises.



Surgical treatment of torrticollis





Pre
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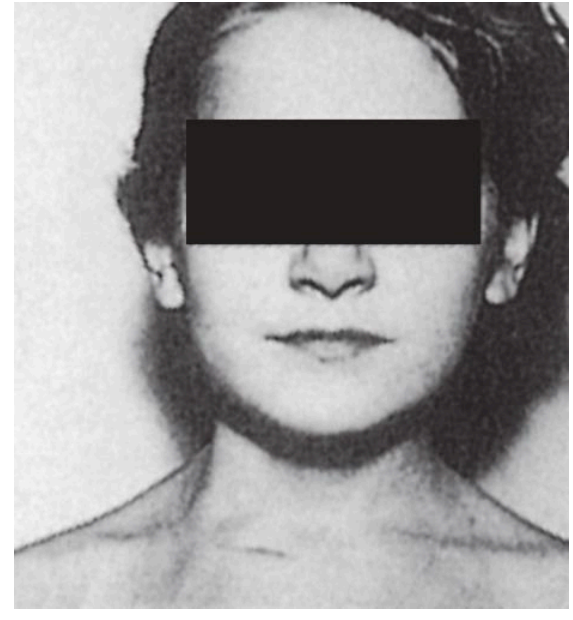

Post
op

Cervical Spondylosis (Cervical spondylarthritis; cervicalspondylarthrosis; cervical osteoarthritis; cervical osteoarthrosis)

- Degenerative changes are common in the cervical spine. Indeed, they are found almost universally in some degree in persons over 50 years of age.
- Beginning in the intervertebral discs, they affect the posterior intervertebral (facet) joints secondarily, causing pain and stiffness of the neck, sometimes with referred symptoms in an upper limb.
- Cause. The primary degenerative changes may be initiated by injury, but usually the condition is simply a manifestation of normal ageing processes.

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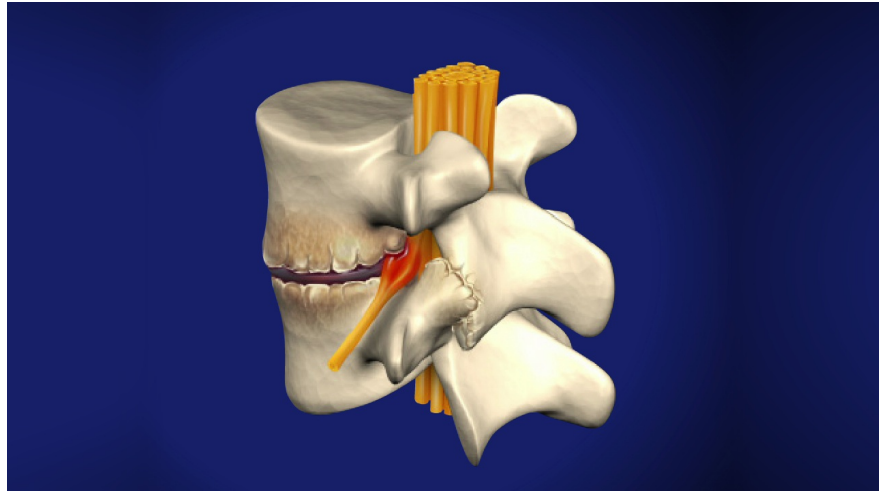
Aetiology

The primary degenerative changes may be initiated by injury, but usually the condition is simply a manifestation of normal ageing processes.

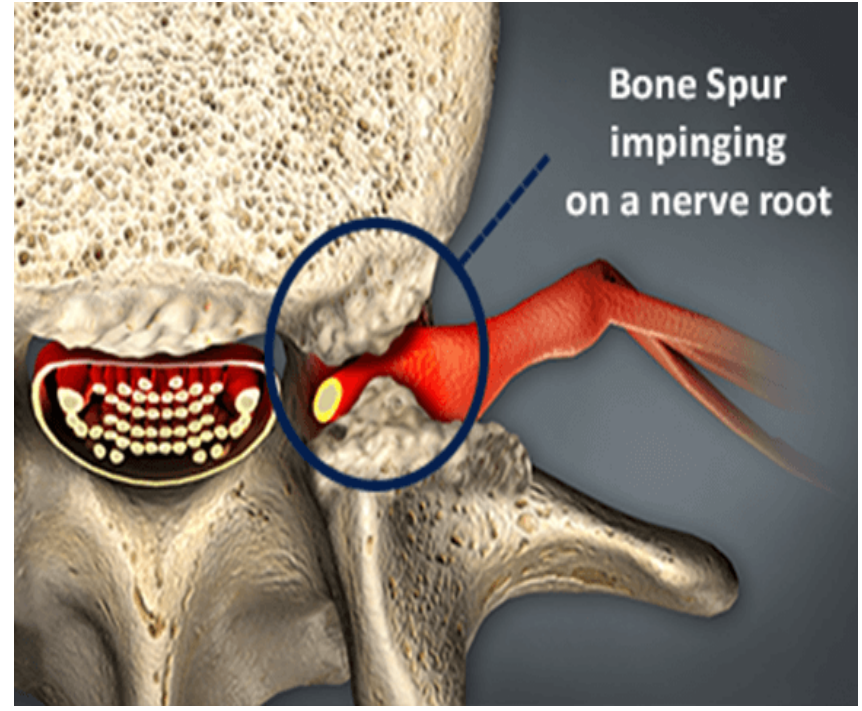
Pathology

- Degenerative arthritis occurs most commonly in the lowest three cervical joints. The changes affect first the central intervertebral joints (between the vertebral bodies) and later the posterior intervertebral (facet) joints.



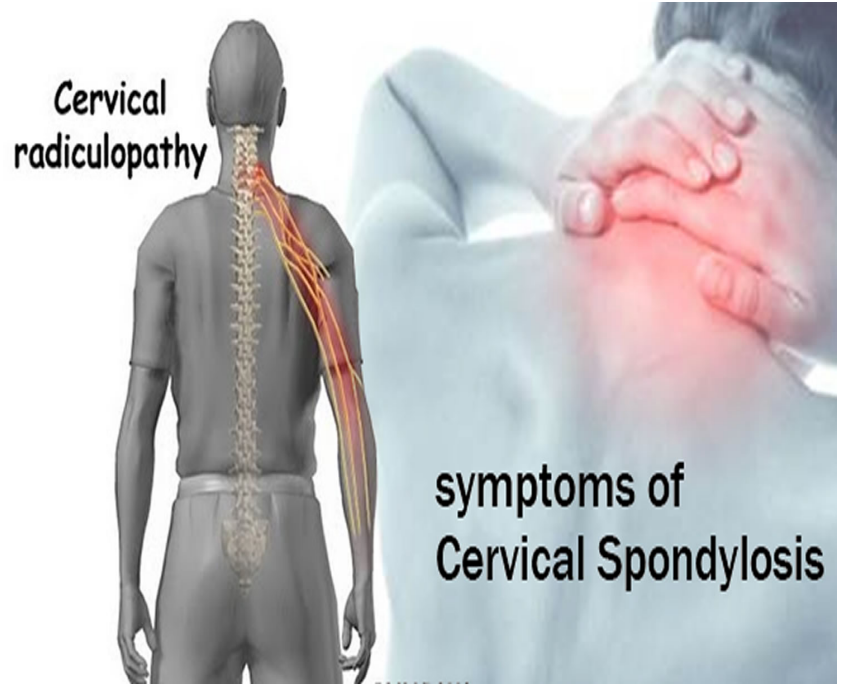
- In the central joints there is degenerative narrowing of the intervertebral disc, and bone reaction at the joint margins leads to the formation of osteophytes In the posterior intervertebral joints the changes are those of osteoarthritis in any diarthrodial joint – namely, wearing away of the articular cartilage and the formation of osteophytes (spurs) at the joint margins

- **Osteophytes commonly encroach upon the intervertebral foramina, reducing the space for transmission of the cervical nerves If the restricted space in a foramen is reduced still further by traumatic oedema of the contained soft tissues, manifestations of nerve pressure are likely to occur.**



Clinical features

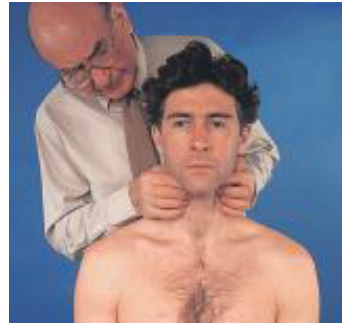
- symptoms usually come on gradually. The patient, usually aged over 40 years, complains of neck pain and stiffness. The pain may radiate widely: to the occiput, the scapular muscles and down one or both arms. Paraesthesia, weakness and clumsiness are occasional symptoms.
- Typically there are exacerbations of more acute discomfort, and long periods of relative quiescence.

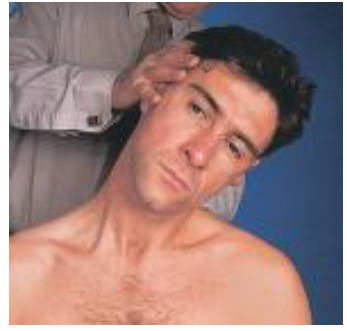


On examination

The appearance is usually normal. There may be tenderness in the soft tissues at the back of the neck and above the scapulae; neck movements are limited and painful at the extremes.

Careful neurological examination may show abnormal signs in one or both upper limbs.





Differential diagnosis

- **A- Other causes of neck pain**.

These include prolapsed cervical disc, tuberculous or pyogenic infection, tumours involving the vertebral column, and fibromyalgia.

- **B- Other causes of upper limb pain These are as follows:**

1- central lesions – tumours involving the spinal cord or its roots; cervical spondylolisthesis. Plexus lesions – tumours at the thoracic inlet (Pancoast); cervical rib; prolapsed intervertebral disc.

2-Shoulder lesions -Rotator cuff lesions: pain around the shoulder may resemble the referred pain of cervical spondylosis. However, features such as rotator cuff tenderness and restricted shoulder movements should suggest a local problem.

3- Skeletal lesions such as a tumour, infection, or Paget's disease of a bone of the upper extremity.

Imaging

- **There is narrowing of the intervertebral disc space, with formation of osteophytes at the vertebral margins, especially anteriorly A single vertebral level may be affected – often at the C5–C6 or C6–C7 level – or there may be changes at more than one level.**
- **Oblique views may show bony encroachment on the intervertebral foramina.**

- **MRI** scanning may be indicated to identify nerve root or cord compression.

Treatment

- There is a strong tendency for the symptoms of cervical spondylosis to **subside spontaneously**, though they may persist for many weeks and the structural changes are clearly permanent.
- In mild cases such measures include **anti-inflammatory analgesic drugs and muscle relaxants.**
- **physiotherapy**. Ultrasound, short-wave diathermy, massage, and intermittent traction have all been used, but none have been shown to be effective in large clinical trials. Some benefit has been shown for mobilisation and strengthening exercises
- In the more severe cases it is wise to provide rest and support for the neck by a closely fitting protective **cervical collar** but this should only be worn for a few weeks until the acute symptoms subside to prevent atrophy of the spinal muscles.

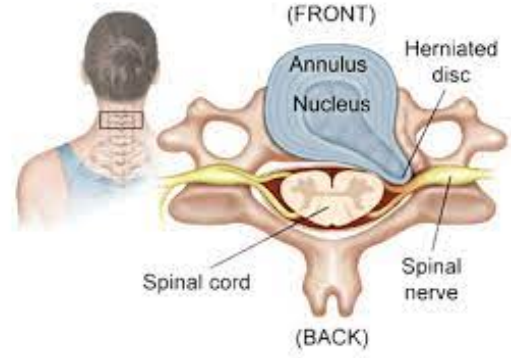
OPERATIVE TREATMENT

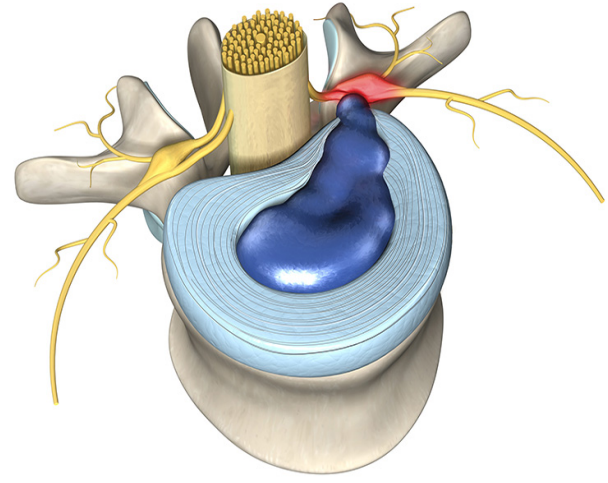
In the exceptional cases in which radiculopathy or myelopathy is progressive and bony impingement can be demonstrated by imaging, surgical decompression may be required:

- Foraminotomy
- Anterior discectomy and fusion
- Intervertebral disc replacement

Acute intervertebral disc prolapse

- Cervical disc prolapse may be precipitated by local strain or injury, especially sudden unguarded flexion and rotation. It usually occurs immediately above or below the sixth cervical vertebra; in many cases (perhaps in all) there is a predisposing abnormality of th disc with increased nuclear tension.





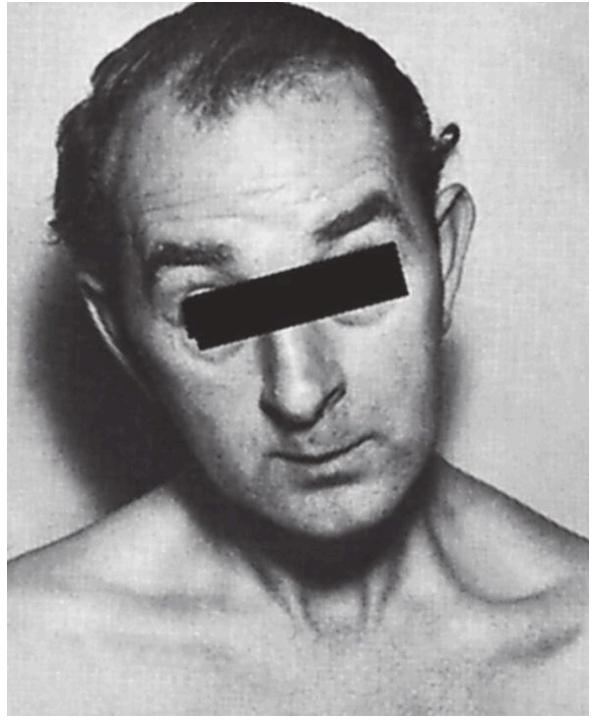
Clinical features

- The original attack may occasionally be related to a definite and severe strain. Subsequent attacks. may be sudden or gradual in onset, and with trivial cause.
- The patient may complain of:

(1) pain and stiffness of the neck, the pain often radiating to the scapular region and sometimes to the occiput;

(2) pain and paraesthesia in one upper limb (rarely both), often radiating to the outer elbow, back of the wrist and to the index and middle fingers.

(3)Weakness is rare.



Differential diagnosis

1-Acute soft-tissue strain:

2-Neuralgic amyotrophy (acute brachial neuritis): pain is sudden and severe, and situated over the shoulder, or the back of the shoulder, rather than in the neck itself.

3-Cervical spine infections: pain is unrelenting and local spasm severe. X-rays show erosion of the vertebral end-plates.

4-Cervical tumours: neurological signs are progressive and x-rays or MRI may show bone destruction.

Imaging

- **X-rays** may show narrowing of the disc space. However, the diagnosis should be confirmed by
- **MRI,** which will show whether the disc protrusion is pressing on the adjacent nerve root.

Treatment

- Heat and analgesics are soothing but, as with lumbar
- disc prolapse, there are only three satisfactory ways
- of treating the prolapse itself:

- ■■ Rest: a collar will prevent unguarded movement; it may be made of felt, sponge-rubber or polythene.
- ■■ Reduce: traction may enlarge the disc space, permitting the prolapse to subside. The head of the couch is raised and weights (up to 8 kg) are tied to a harness fitting under the chin and occiput. Traction is applied intermittently for
- no more than 30 minutes at a time.
- ■■ Remove: if symptoms are refractory and severe enough, the disc may be removed through an anterior approach; bone grafts are inserted to fuse the affected area and to restore the normal intervertebral height. Nowadays the operation can also be performed using endoscopic techniques.

infection

TB / pyogenic

Pyogenic infection

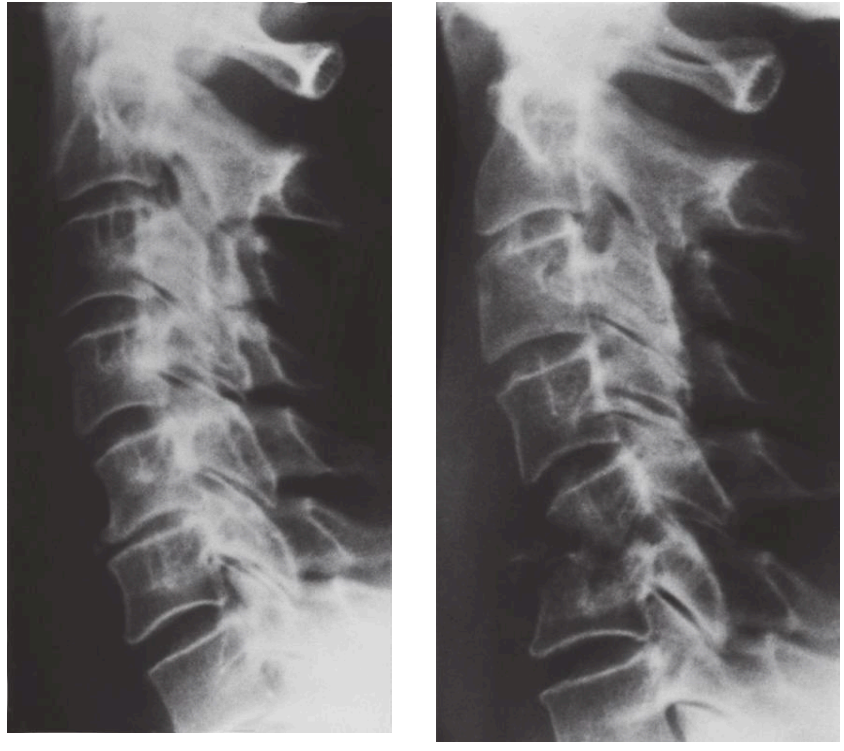
- Pyogenic infection of the cervical spine is uncommon, and therefore often misdiagnosed in the early stages when antibiotic treatment is mosteffective. The organism – usually a staphylococcus reaches the spine via the blood stream. Initially, destructive changes are limited to the intervertebral disc space and the adjacent parts of the vertebral bodies.
- Later, abscess formation occurs and pus may extend into the spinal canal or into the softtissue planes of the neck.

Clinical features

- Vertebral infection may occur at any age. The patient complains of **pain** in the neck, often associated with muscle **spasm and stiffness**. Neck movements are severely restricted.
- Systemic symptoms are often mild but blood tests may show a leucocytosis and an elevated erythrocyte sedimentation rate (ESR)

X- ray

- X-rays at first show either no abnormality or only slight narrowing of the disc space;
- later more obvious signs of bone destruction appear.



Treatment

- Treatment is by antibiotics and rest. The cervical spine is ‘immobilized’ by traction; once the acute phase subsides, a collar may suffice.
- Operation is seldom necessary; if there is abscess formation, this will require drainage. As the infection subsides the intervertebral space is obliterated and the adjacent vertebrae usually fuse.

Tuberculosis

- Cervical spine tuberculosis is rare. The organism is blood-borne and the infection localizes in the intervertebral disc and the anterior parts of the adjacent vertebral bodies.
- As the bone crumbles, the cervical spine collapses into kyphosis.
- A retropharyngeal abscess forms and points behind the sternomastoid muscle at the side of the neck. In late cases cord damage may cause neurological signs varying from mild weakness to tetraplegia.

Clinical features

- The patient – usually a child – complains of neck pain and stiffness. In neglected cases a retropharyngeal abscess may cause difficulty in swallowing or swelling in the posterior triangleof the neck.
- The neck is extremely tender and all movements are restricted.
- In late cases there may be obvious kyphosis, a fluctuant abscess in the neck or a retropharyngeal swelling.

The limbs should be examined for neurological defects.

Tuberculosis This child had been complaining of neck pain and stiffness for several months. When she was brought to the clinic she had a large lump at the side of her neck – a typical tuberculous abscess

TB

- X-rays show narrowing of the disc space and erosion of the adjacent vertebral bodies.

- **Treatment** is initially by antituberculous drugs and ‘immobilization’ of the neck in a cervical brace or plaster cast for 6–18 months.
- Operative debridement of necrotic bone and anterior cervical vertebral fusion with bone grafts may be offered as an alternative to such prolonged immobilization.More urgent indications for operation are: (1) to drain a retropharyngeal abscess; (2) to decompress a threatened spinal cord; or (3) to fuse an unstable spine.


NO PAIN
NO GAIN


TAKE THE
RISK OR
LOSE THE
CHANCE.
Jack James